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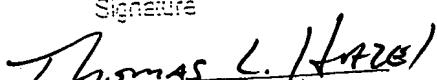
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(12) **United States Patent**  
Kucherlapati et al.

(10) **Patent No.:** US 6,657,103 B1  
(45) **Date of Patent:** \*Dec. 2, 2003

(54) **HUMAN ANTIBODIES DERIVED FROM IMMUNIZED XENOMICE**

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(\*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 08/923,138

(22) Filed: Sep. 4, 1997

**Related U.S. Application Data**

(63) Continuation of application No. 08/430,938, filed on Apr. 27, 1995, now abandoned, which is a continuation-in-part of application No. 08/234,145, filed on Apr. 28, 1994, now abandoned, which is a continuation-in-part of application No. ~~08/112,848~~, filed on Aug. 27, 1993, now abandoned, which is a continuation of application No. 08/031,801, filed on Mar. 15, 1993, which is a continuation-in-part of application No. 07/919,297, filed on Jul. 24, 1992, now abandoned, which is a continuation-in-part of application No. 07/610,515, filed on Nov. 8, 1990, now abandoned, which is a continuation-in-part of application No. 07/466,008, filed on Jan. 12, 1990, now abandoned.

(51) Int. Cl. <sup>7</sup> ..... C12P 21/00; A01K 67/027; C12N 15/63

(52) U.S. Cl. ..... 800/6; 800/4; 800/18; 435/320.1

(58) Field of Search ..... 800/4, 6, 18; 435/320.1

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**ABSTRACT**

Antibodies with fully human variable regions against a specific antigen can be prepared by administering the antigen to a transgenic animal which has been modified to produce such antibodies in response to antigenic challenge, but whose endogenous loci have been disabled. Various subsequent manipulations can be performed to obtain either antibodies per se or analogs thereof.